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Employment Effects of Restructuring in the Public Sector in North America

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The views expressed in this paper are those of the authors.
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Abstract

This paper examines whether restructuring in the public sector contributed to the slower cyclical recovery in Canada than in the United States during the 1990s. Changes in public sector employment are used to investigate this question. The pressures that led up to the restructuring are explored and the resulting changes in employment are documented. A standardized definition of the public sector is proposed that allows for a consistent comparison of changes in employment in Canada with those of the United States. These changes are examined by level of government and by function. The analysis reveals that, in Canada, changes in employment in the "standardized" public sector were negative during much of the 1990s, in contrast to the continued, steady expansion of this sector in the United States. Evidence presented from longitudinal surveys indicates that certain workers who were displaced from the public sector in Canada experienced difficulties regaining employment. A key conclusion is that public sector restructuring contributed to the slower recovery in employment in Canada in the 1990s.

JEL classification: J45
Bank classification: Labour markets

Résumé

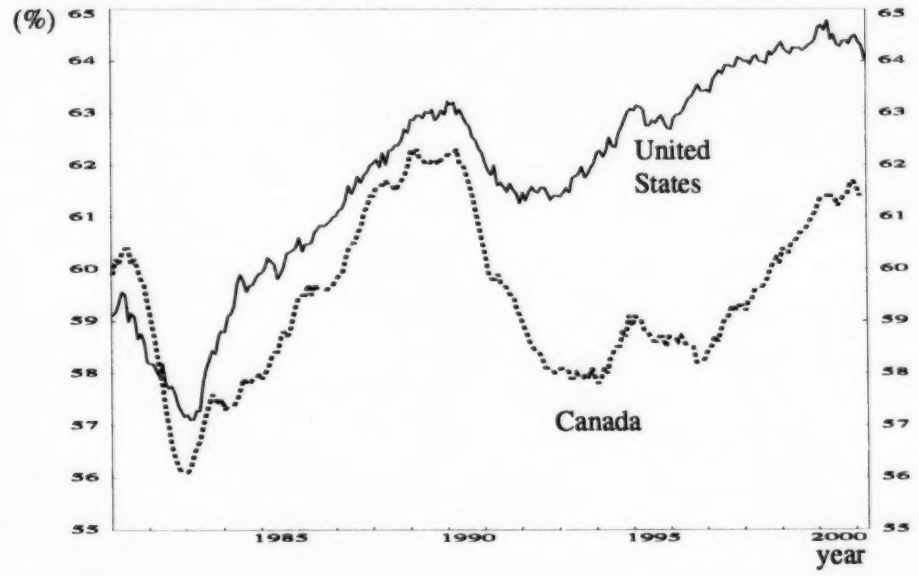
Les auteurs cherchent à établir si la restructuration du secteur public a contribué au fait que la reprise cyclique a été plus lente au Canada qu'aux États-Unis au cours des années 1990. Ils analysent à cette fin l'évolution de l'emploi dans le secteur public. Ils examinent les facteurs qui ont donné lieu à la restructuration de ce secteur et les variations de l'emploi consécutives à celle-ci. Les auteurs ont recours à une définition standardisée du secteur public afin de pouvoir comparer les variations de l'emploi au Canada et aux États-Unis, selon le niveau de gouvernement et la fonction assurée. Leur analyse révèle qu'au Canada, l'emploi dans le secteur public (d'après la définition standardisée des auteurs) a diminué durant la majeure partie des années 1990, alors qu'aux États-Unis, il a augmenté à un rythme régulier. Les résultats tirés d'enquêtes longitudinales indiquent que certains des travailleurs ayant dû quitter le secteur public au Canada ont eu du mal à retrouver un emploi. L'une des conclusions principales de l'étude est que la restructuration entreprise dans le secteur public canadien explique en partie la reprise plus lente de l'emploi pendant les années 1990.

Classification JEL : J45
Classification de la Banque : Marchés du travail

1. Introduction

Both Canada and the United States experienced economic recessions in the early 1990s. From 1990Q2 to 1991Q1, Canada's output contracted by 2.8 per cent in real terms while real output in the United States fell by 1.5 per cent. Not only was the recession more severe in Canada, but the recovery was also much slower than in the United States. One feature of this slower recovery was the poor labour-market performance in Canada after the recession. For example, although trends in the employment ratio were fairly similar for the two countries throughout the 1980s, during the recession the employment ratio declined sharply in Canada and remained stubbornly low for much of the 1990s (Chart 1).

Chart 1: Employment Ratios[a], Canada and the United States



Note: a.The employment ratio is defined as the employed fraction of the working-age population. In Canada, the working age is defined as 15+. In the United States, the working age is defined as 16+. Sources: Statistics Canada and the United States Bureau of Labor Statistics.

This paper examines whether public sector restructuring can help to explain the difference in the strength of the cyclical recoveries in Canada and the United States in the 1990s. Particular attention is paid to changes in employment in the public sector in the two countries. A key conclusion is that public sector restructuring had a greater impact on the labour market in Canada than in the United States during this period.

Section 2 examines the events that led up to the restructuring of the public sector in Canada during the 1990s. Section 3 describes the difficulties of obtaining comparable measures of public sector employment in the two countries and establishes the definition that is used for this study. Section 4 compares the public sector in the two countries in terms of aggregate employment. Section 5 offers some conclusions. The appendixes examine employment of government business enterprises in Canada and document the data sources used for the charts that appear in the main text.

2. Pressures to Restructure

Following the 1990–91 recession, a general consensus was reached regarding the seriousness of the deficits and debt burdens of Canadian governments. In addition, there was a greater focus on fiscal prudence internationally, led by the planned Economic and Monetary Union (EMU) in Europe. Although it was expected that federal and provincial deficits would be reduced as the economy recovered and expanded, it had become clear that, in most cases, discretionary action would also be necessary. Because governments had already increased taxes substantially, it appeared inevitable that program expenditures would have to be cut. The size of the cuts necessitated a massive restructuring of the public sector, including the public service. From 1992 to 1998 there was a major reduction in public sector employment and, while some of those who left the public service found other jobs or became self-employed, the net effect on Canadian employment was undoubtedly negative. Although it has been recognized that some of the cuts may have been too deep, most of the effects of the restructuring remain; for example, in the health care and education sectors and in the government's withdrawal from a number of commercial activities. While there has been some recovery in public sector employment in recent years, at the end of the year 2000 it was still 6.0 per cent below its peak in 1992.

The government sector's net debt-to-GDP ratio (the debt ratio) began to increase in the mid-1970s, after declining since the end of World War II, and by the early 1990s it was approaching 100 per cent of GDP on a public accounts basis. While the recessions of the early 1980s and 1990s had caused the ratio to ratchet upwards, there were structural factors behind the upward trend.

The structural factors had their origins in the 1960s and early 1970s. Strong productivity and output growth, as well as a highly progressive unindexed personal income-tax system, had given rise to buoyant growth of government revenues. This environment provided a strong incentive for the introduction of new social spending and the enhancement of existing programs. But because total expenditure did not grow much faster than revenue, deficits were relatively small.

Furthermore, the fast growth of economic activity meant that, relative to GDP, the outstanding net debt, most of which was federal, continued to fall.

From 1974 to 1980, however, while spending continued to keep pace with output growth, revenues grew more slowly. Only after a number of years did policy-makers and economists recognize that trend productivity growth had declined in Canada as it had in many other industrial countries. In addition, there had been a steady erosion of the revenue yield owing to a number of developments in the tax system, including the indexation of personal income tax by the federal government and a cut in the general sales tax as well as a shrinkage of its base.[1] As spending plans were slow to adjust to the lower trend in revenue growth, deficits and the debt ratio began to rise, particularly at the federal level. Thus, when the economy went into a recession in 1981, the federal government and some of the provinces were already in a deficit and their debt ratios had been rising for some years. The cyclical rise in the deficit during the 1981–82 recession did not, initially, cause much comment, but Lipsey and Purvis (1982) expressed concern about the underlying trend in spending and its impact on the deficit.[2] At the same time, there was uncertainty in financial markets about the size of future government deficits and the possibility of public sector dominance of Canadian capital markets (Cook 1982).

Beginning in the early 1980s, there was a shift in global real interest rates to levels that generally exceeded economic growth rates in most Organisation for Economic Co-operation and Development (OECD) countries (Chouraqui, Jones, and Montador 1986, 114). Combined with the higher levels of debt to be financed by the Canadian government, the ingredients for explosive federal debt growth were, thus, in place. By the mid-1980s, a number of analysts were expressing concern about the rising debt ratio of the federal government. Bruce and Purvis (1984) described the federal government's five-year fiscal plan of February 1984 as imprudent. They laid out a prudent long-term goal and intermediate path for the debt ratio and prescribed a reduction in the projected federal deficit of $11 billion between 1984 and 1988. A group of economists convened by the C.D. Howe Institute and the University of Toronto's Institute of Policy Analysis in late 1984 stated (Communiqué 1984) that,

> In the longer term, the persistence of the structural deficit, if it leads to a continual increase in the ratio of public debt to GNP (sic), is a cause for concern. The higher the ratio of public debt to GNP the higher will be a number of longer-term economic costs, such as a higher tax burden to service the public debt, lower investment, and increased foreign debt.

However, when Michael Wilson, the Minister of Finance, made a commitment in 1985 to reduce the deficit, not all economists agreed on the merits of deficit reduction (Little 1985). The May

1. See Mimoto and Cross (1991) for a detailed explanation of the various factors behind expenditure and revenue developments at the federal level.
2. Lipsey and Purvis suspected "that the government [had] lost long-term control over its spending."

1985 federal budget called for a reduction of the public service by 15,000 employees over three years. The deadline was later unofficially extended by the Treasury Board to five years. The net result of the restructuring programs, however, was a decrease of only 4,000 federal public service employees on a full-time-equivalent (FTE) basis from 1985 to 1993 (Lee and Hobbs 1997).[3] Chouraqui, Jones, and Montador (1986, 116) included Canada in a group of 13 countries whose debt situations were "characterized as 'unstable' in the sense that their public debt/GNP ratio would continue to rise if the non-interest budget balance [did] not improve," which would bring Canada's debt ratio close to 95 per cent by the end of the century.

By the early 1990s, the structural aspect of the deficit and debt was attracting more attention. For example, Fortin (1990) estimated that more than 60 per cent of the federal debt explosion in the 1980s was the result of "the very expansionary budgets of 1982–84." Thus, there were significant primary structural deficits from 1981 to 1985, of which about two-thirds came from program expenditures, according to Fortin. Although there were various estimates of the size of the structural balances, depending primarily on the way potential output, an unobservable variable, was estimated, estimates by the International Monetary Fund (IMF) and the OECD indicate that a significant part of the deficit had been structural from 1978 to 1995 (see Appendix A).

Fortin concluded that, to stabilize and reduce the debt ratio over the following five years, the government had to maintain its fiscal plan for tax rates and program expenditures. Although the federal deficit/GDP ratio did decline in the second half of the 1980s, it was not sufficient to prevent the debt ratio from rising. Taking a longer view of the failure to adopt the necessary measures to reduce the debt ratio, Hartle (1993, 105–13) pointed to a number of factors, including errors in forecasting, misleading information from preliminary data estimates, and the high unemployment rate, which sent a signal that the economy was weaker than it turned out to be.

While the federal deficit and debt had dominated the debate and analyses in the 1980s, there was a growing realization in the 1990s that the provinces were adding to the burden; pressure was increasing on the provinces to contain their expenditures and to re-evaluate their programs.[4] Support for the restructuring of the public sector reached a critical mass in the 1990s.

3. The government endorsed two "incentive-like" programs. The first program was designed to encourage employees from the National Research Council (NRC) to resign in exchange for compensation. Based on the success at the NRC, the government adopted a more formal arrangement, with a broader scope, called the Work Force Adjustment Policy. This policy allowed surplus federal employees to resign and receive Payment-in-Lieu of Notice (PIL) contingent on the approval of the Treasury Board. By the end of this five-year period, the government had removed 15,000 full-time indeterminate employees from its payroll (see footnote 24 for a definition of indeterminate). However, this reduction was offset by an increase in the number of employees in other areas, such as term employment (+9,419).

4. It is interesting to note that one of the most vocal champions of fiscal reform was Alberta, which had the lowest debt-to-GDP ratio of all the provinces. See, for example, the Alberta Review Commission (1993).

The growing international interest in fiscal prudence made it more difficult for Canadians to ignore their own fiscal situation. While there was no agreement on a sustainable debt ratio, the Maastricht text on EMU stipulated that to be eligible to join, a country's gross general government debt should not exceed 60 per cent of GDP. Canada's debt ratio of 100 per cent therefore appeared to be excessive. Deficit reduction and fiscal reform, frequently including cuts to the public service, had been taking place in a number of countries since the mid-1980s. Ireland and Belgium, whose gross public debt had risen well above 100 per cent in the early 1980s, changed fiscal policy sufficiently to bring about a decline in their debt ratios in the second half of the decade. Australia, France, the U.K., and Sweden all reduced the size of their public sectors in the first half of the 1990s. Furthermore, the sharp rise in the percentage of the debt held by non-residents raised the concern that "decisions regarding Canadian fiscal and monetary measures must . . . [also] respond to international economic forces which we cannot control."[5] In 1995, Moody's reduced Canada's domestic and foreign debt rating.

Since Canada's tax burden did not compare favourably with those of its major trading partners, fiscal measures had to focus on program expenditures. Most of the recommended solutions included a restructuring of programs, implying that public sector employment would also be restructured.[6] At the federal level, in contrast to the unfulfilled restructuring of the mid-1980s, employment in the public service fell by almost 55,000 between 1992 and 1998. While a high-profile recruitment drive has added close to 10,000 jobs over the last two years, Paul Mercier, of the Treasury Board, insists that the bureaucracy will not return to pre-cut levels (May 2000). Today, at just under 250,000 employees, the federal public service has roughly 45,000 fewer employees than it did at its peak in the early 1990s. A similar story is apparent at the provincial level, which includes health, education, and social services. Having reached its all-time high of approximately 1.41 million employees in 1992, the total provincial workforce declined steadily until 1999, when it numbered about 1.31 million employees. By 2000, there were still 92,000 fewer people employed by the provincial public sector than in 1992. In fact, as the rest of this paper shows, there has been a pronounced and decisive adjustment to the level of employment in all public sector activities over the past decade in Canada.

While this restructuring was largely motivated by years of persistent structural deficits that could no longer be sustained, other factors influenced the design and delivery of government services during the 1990s. It is difficult, however, to assess their importance, because of the limitations of the available data and the fact that their implications are not yet fully understood. A shift towards a more highly educated workforce[7] and the promise of telecommunications and computing

5. Cited in Canada, Department of Finance (1994).
6. See Laidler and Robson (1995, 3).
7. The percentage of jobs in the federal public service that require a university degree has increased to 50 per cent, compared with 30 per cent just 15 years ago (May 2000).

technology seem to be strong forces that have had a considerable impact on the public sector in Canada, particularly over the past two decades. While both of these issues are equally interesting and deserve further attention, there seems to be slightly more information about the role that technology has played in shaping the public sector. For example, as a quick measure, the ratio of investment in "technology" to total investment[8] in the government sector increased at a remarkable rate from the early 1980s to the end of the 1990s.

Surprisingly, real spending on "technology"[9] continued to rise dramatically even in the midst of substantial cutbacks elsewhere in government. In 1996, the Auditor General's report indicated that government expenditures at the federal level on "information technology, including capital, operating, personnel and other related costs, exceed $3 billion annually. Information technology not only represents a significant investment by government but also is a prerequisite for supporting the renewal of government services."[10] In 1998, the Auditor General's report stated that "the government has been using many established technologies to replace paper-intensive and cumbersome processes, in administration and operations and in the delivery of programs and services," and that in some cases the use of kiosks and other technologies allowed governments to "provide key information to [their] clients electronically, on-site and without intervention from staff." One example of this was Environment Canada; they were "able, in large part, to ride a technological fix to its Program Review cuts. The acceleration of the Atmospheric Environment Service's 1987 strategic plan to automate the delivery of weather services [allowed] the department to absorb over half of the personnel cuts (800 of 1,400) by replacing labour-intensive and routine tasks by technology" (Toner 1996). The role that technology and other factors played in the restructuring of the public sector is outside the scope of this paper. Their effect on aggregate employment remains to be determined.

3. The Size of the Public Sector

In modern industrial economies, the public sector has a wide range of responsibilities. In countries with federal systems, such as Canada and the United States, the public sector is complex. To understand this sector, a starting point is to try to assess the scope of the

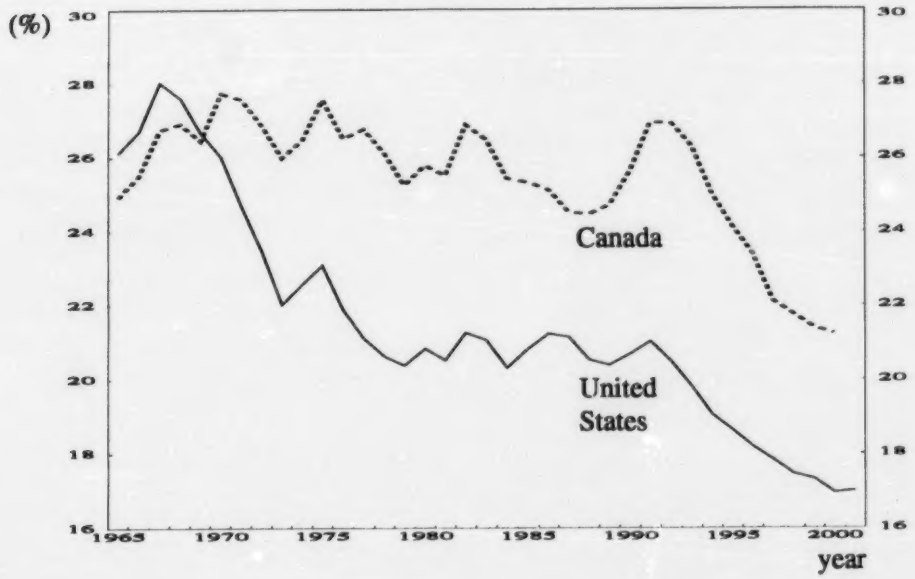
8. "Technology" is measured by the ratio of investment in computers and other office equipment to total investment in non-residential structures and equipment in the government sector (from the National Income and Expenditure Accounts). Unfortunately, when this study was initiated, computer software was not yet "capitalized" in the national accounts data, and therefore our measure excludes this important component.
9. The term comprises computers and other office equipment.
10. Government expenditure on goods and services plus investment in capital was roughly $200 billion in 1996.

government's activities, focusing on various aspects of employment in the public sector in Canada in comparison with the United States. Also to be considered are other frequently used measures of the size of government, such as the share of goods and services it consumes as well as the relative size of the government deficit. This section compares developments in these measures for the total government sector in Canada and the United States. Differences in the responsibilities of the public sector in the two countries make meaningful comparisons difficult, particularly in the areas of education and health care. In this section, no attempt is made to control for these differences, but later sections examine employment more closely using a standardized definition of the public sector across the two countries.

Spending by the government on goods and services as a proportion of GDP (in real terms) followed a similar path in Canada and the United States from the early 1960s until 1970 (Chart 2).[11] While there was a moderate decline in this ratio in Canada until 1989, the U.S. ratio fell significantly in the early 1970s and continued at this lower level until 1989. With 1989 as the starting point, the ratio appears to have declined by similar amounts in the two countries over the 1990s. However, since the ratio in Canada behaved quite differently from that in the United States during the early part of the 1990s, how to choose the most appropriate starting point is not clear. In the United States during the early 1990s, expenditures were stable but declines in the denominator, owing to a recession, drove the ratio up, much like during earlier contractionary periods. In Canada, however, the combination of above-trend expenditures as well as a prolonged downturn caused the cyclical spike in the ratio to rise higher and last longer than it had during earlier recessions. As a result, the decline in this ratio has been much sharper in Canada than in the United States since 1992. From 1992 to 2000, the ratio of government spending to GDP declined by 5.7 percentage points in Canada and by 3.6 percentage points in the United States.

11. This study uses national accounts data released prior to the methodological revisions implemented in May 2001 (the "capitalization" of computer software and the introduction of chained-volume data).

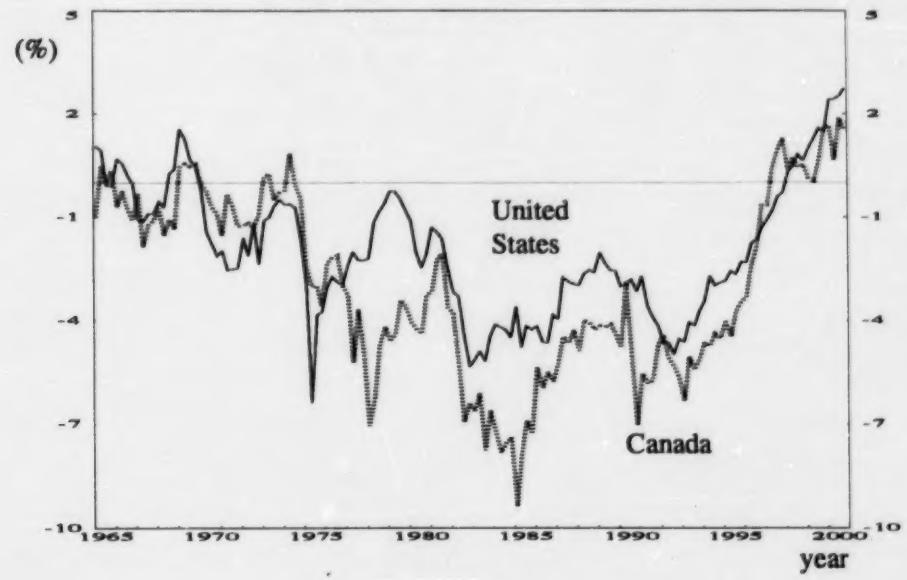
Chart 2: Government Expenditure on Goods and Services as a Proportion of GDP (at 1992 Prices)



Note: No adjustment has been made to government expenditures, to reflect the different role of the public sector in the two countries.

The federal government deficit as a proportion of GDP (in nominal terms) followed a broadly similar path in the two countries from the early 1960s until about 1975 (Chart 3). From 1975 to 1996, Canada's deficit was, for the most part, consistently worse than that of the United States. During this period, Canada recorded a comparatively larger deficit, reaching 9.4 per cent of GDP in the first quarter of 1985 (compared with a peak in the United States of 5.3 per cent in the second quarter of 1982). Towards the end of the 1990s, both countries had managed to reverse their deficit positions and were recording budget surpluses for the first time since the early 1970s. While deficit reduction was achieved through a combination of decreased expenditures as well as revenue growth, Canada's revenue did not grow as strongly as it had in the United States and so a larger part of the Canadian strategy relied on expenditure reductions.

Chart 3: Federal Government Balance as a Proportion of Nominal GDP



4. Definitions

This paper endeavours to measure what would be a U.S. equivalent of the Canadian public sector by adopting a standardized definition of the term "public sector" that is consistent across the two countries. Other studies that have used narrower definitions of the term and conducted cross-country comparisons report results consistent with those reported here.[12]

In Canada, the public sector, as identified by Statistics Canada, has two components: government and government business enterprises (GBE). "Government" embodies all institutional units that are not-for-profit entities and that do not operate in the commercial market. GBEs include all entities controlled by the government that are engaged in operations of a commercial nature and charge economically significant prices (Canada. Statistics Canada. 1998b). Most Crown corporations are considered to be GBEs.

The comparisons in the main body of this paper omit GBEs to concentrate exclusively on the narrower definition of the public sector, entities that operate in the "non-commercial" market. Appendix B briefly discusses employment in GBEs in Canada.

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12. The OECD (1999) used Federal Public Service Employees paid by the Treasury Board, and this represents about 65 per cent of federal employees. Atkinson and van den Noord (2001) acknowledge, but do not attempt to adjust for, the fact that the boundaries of the public sector vary widely across countries.

Military employment is excluded from the total and federal public sector comparisons in the main text of this paper so that estimates in those categories can be based upon the same civilian, non-institutional population that is used to construct the headline indicators for conditions in the labour market,[13] such as the employment ratio or the unemployment rate. However, a brief overview in subsection 5.2 looks specifically at the changes to the number of military personnel in the two countries.

Education, health care, and social services are primarily delivered by the government in Canada and, as a result, were included in the definition of public sector. Although some of these services are delivered by the government in the United States, a large proportion comes from the private sector. To obtain comparable measures, therefore, it was necessary to include certain private sector activities in the definition of the U.S. "public sector" and, in the process, to redefine "state" government for the United States.[14] The fact that a large proportion of health care is delivered by the public sector in Canada has made most of it subject to the same fiscal constraints as public administration, unlike in the United States.

In this paper, the term Canadian equivalent (CE) denotes U.S. series that have been adjusted to achieve meaningful comparisons between public sector employment in Canada and the United States. A summary of these adjustments and the series that were used is provided in Appendix C.

It is not obvious how to create consistent definitions for the federal government, state/provincial government, and local government comparisons between Canada and the United States. The U.S. Postal Service was removed from the federal government in the United States in much the same way that GBEs were omitted from the public sector in Canada. Also, to obtain a CE measure, most private and public education, and health care and social services, were added to state public sector employment in the United States because they fall under provincial jurisdiction in Canada. A small amount of private education in Canada not included in the data introduces a slight bias in the comparisons of the two countries.

13. These indicators are usually based on *Labour Force Survey* data for Canada or *Current Population Survey* data for the United States.
14. Employment at offices and clinics of medical doctors was excluded from the health-care sector in the United States.

In this paper, the definition of the public sector:

Includes: public administration, education*, health care*, social services*

Excludes: GBEs**, military personnel

* For comparability with Canadian data, U.S. data include certain U.S. private sector activities in these areas.
** This study considered the U.S. Postal Service to be a GBE and consequently it was excluded from the U.S. data.

5. Employment in the Public Sector

This section compares the evolution in public sector employment as a whole, as well as in the key subaggregates of public administration, educational services, and health care and social services, in Canada and the United States (Tables 1 and 2). Obtaining comparable measures of employment in the public sector and key subcomponents in the two countries is not a simple task; for example, taking into account the use of contract workers and consultants by the government in the two countries is virtually impossible. Considerable effort has been expended to obtain measures that are as comparable as possible. As described in section 4, because services delivered by the government differ between the two countries, it was necessary in some instances to include private sector employment in the U.S. data. For example, most health-care service-providers are in the private sector in the United States, whereas they are in the public sector in Canada.

Table 1: Employment in the Public Sector, Canada
(approximate levels in millions)

	1985	1992	1998	2000
Total	2.266	2.607	2.445	2.450
By level				
Federal	0.289	0.294	0.239	0.249
Provincial	1.218	1.409	1.315	1.318
Local	0.759	0.904	0.891	0.883
By function				
Public administration	0.692	0.750	0.670	0.681
Education	0.734	0.882	0.888	0.884
Health care and social services	0.629	0.749	0.709	0.719
Military	0.111	0.117	0.092	0.087[a]

a. Estimate based on data to September 2000.

Table 2: Employment in the Public Sector, United States
(approximate levels in millions)

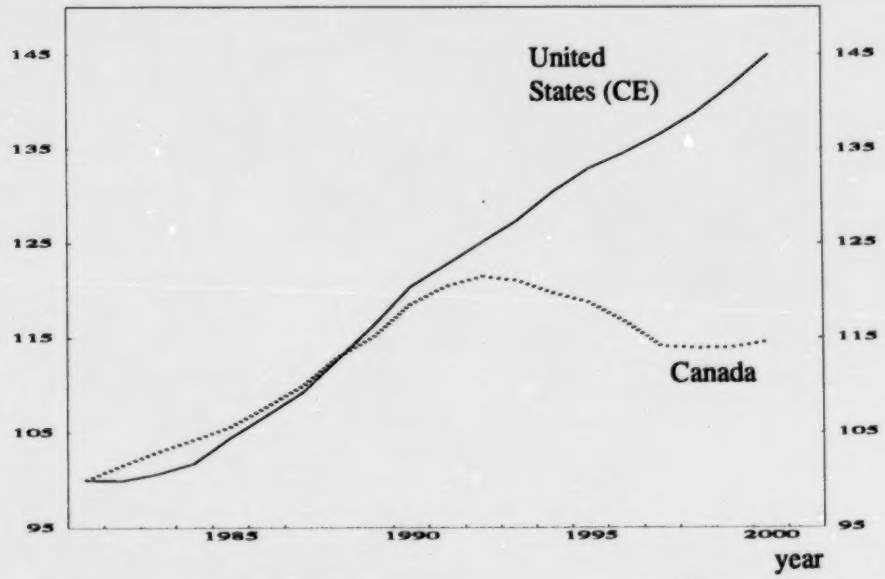
	1985	1992	1998	2000
Total	22.679	27.166	30.145	31.477
By level				
Federal (CE)	1.885	1.942	1.596	1.698
State (CE)	11.717	14.623	16.658	17.374
Local (CE)	9.078	10.601	11.892	12.404
By function				
Public administration (CE)	4.997	5.641	5.886	6.015
Education (CE)	8.238	9.691	11.179	11.729
Health care and social services (CE)	6.976	8.957	10.215	10.613
Military	2.151	1.807	1.439[a]	–

a. Data for 1997.

5.1 Employment—total public sector

From 1981 to 1990, employment in the public sector increased at essentially the same average rate in the two countries (Chart 4). However, during the 1990s, employment in the public sector diverged markedly in the two countries. After peaking in 1992, employment in the public sector in Canada fell precipitously, recording a cumulative decrease of about 6.2 per cent by 1998.[15] In contrast, employment in the public sector (CE) in the United States increased steadily, registering a cumulative increase of 11 per cent by the end of 1998 (Chart 4). From 1998 to 2000, employment in the public sector in Canada was stable while it continued to rise in the United States, exacerbating the gap between the two countries.

Chart 4: Employment, Total Public Sector (CE), 1981=100

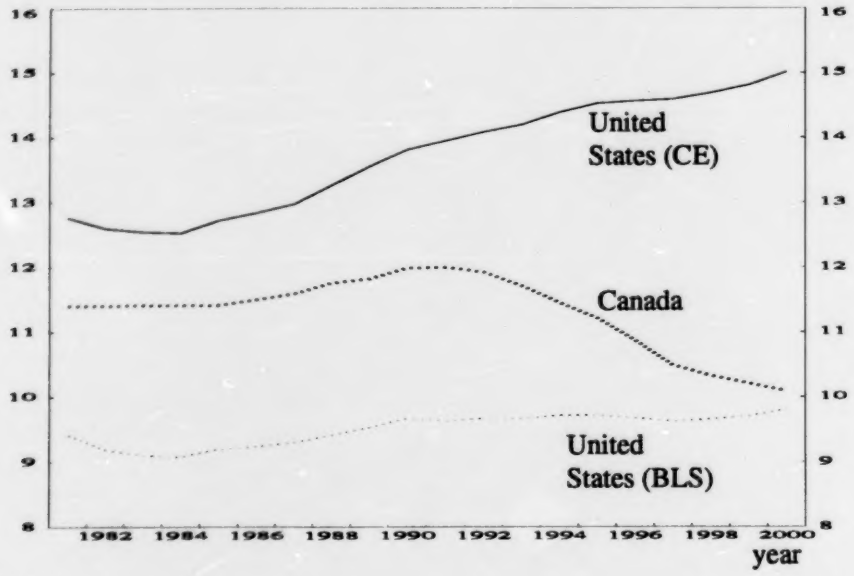


The ratio of public sector employment to working-age population[16] has fallen off in Canada since 1991, while the CE measure (which includes certain private sector activities for comparability) has continued to grow steadily in the United States (Chart 5). This ratio fell 1.9 percentage points in Canada and rose by 1.1 percentage points in the United States by 2000. If the official Bureau of Labor Statistics (BLS) definition of public sector is used, the U.S. ratio was relatively unchanged

15. In part, this reflects the privatization of some activities of the federal government. For example, a shift of Transport Canada's functions to the private sector in 1996 involved more than 6,000 jobs. The role of privatization is discussed further below.
16. The working-age population is defined as 15+ years old in Canada and 16+ years old in the United States.

over the 1990s (Chart 5), indicating that changes in the ratio are significantly different over the 1990s even when adjustments are not made to standardize the measure in the two countries.

Chart 5: Ratio of Public Sector (CE) Employment to Working-Age Population (per cent)



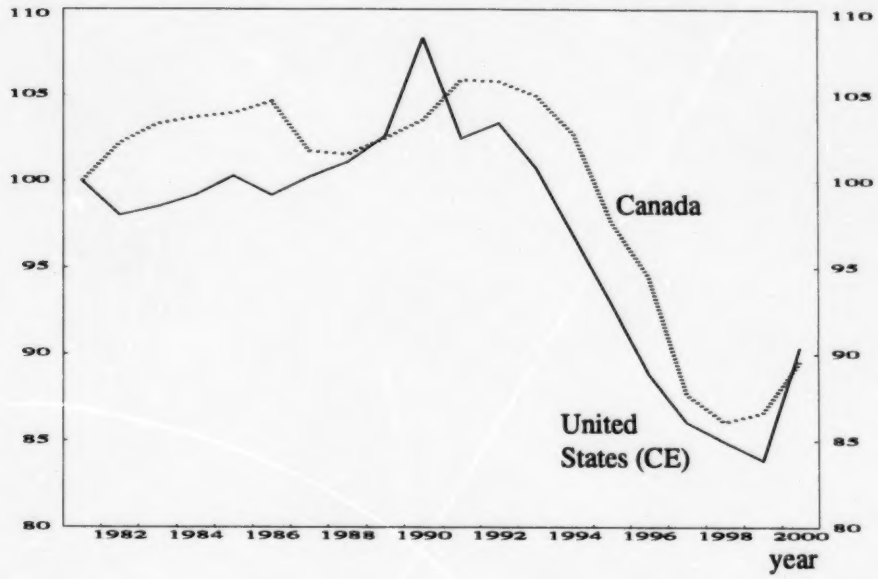
5.2 Employment—by level of government

The significant difference in employment evolution between the two countries is not apparent at all levels of government. Public sector (CE) employment data at the federal level reveal that the federal civil service in both Canada and the United States recorded cumulative gains from 1981 to 1991.[17] Canada's federal civil service grew by 5.9 per cent, over twice the amount of its U.S. counterpart (2.6 per cent).

Restructuring at the federal level seems to have begun at approximately the same time in Canada and the United States. By 1994, it appears that both countries had embarked on a major overhaul at the federal level.[18] In 1998, employment in the federal public sector in Canada was 18.6 per cent below its level in 1992,[19] and employment in the federal public sector (CE) in the United States had declined by 17.8 per cent from its level in 1992 (Chart 6).

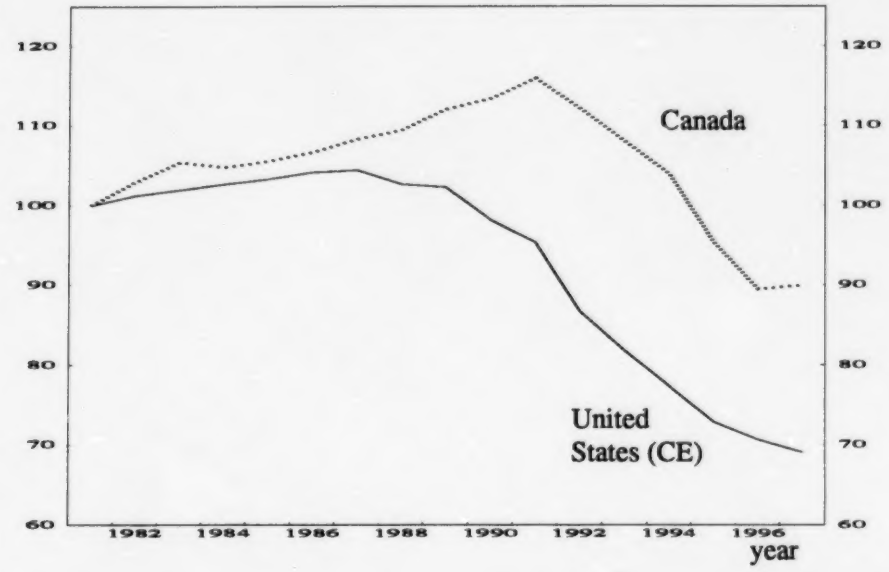
17. One must be careful when evaluating employment at the federal level in the two countries because of the significant effect on employment produced by temporary hires during census years. The spike in 1990 and again in 2000 for the U.S. series is attributable to the U.S. ten-year census. Canada's census does not seem to have as pronounced an effect but is, nevertheless, apparent every five years, such as in 1991.
18. The National Performance Review played a major role in the restructuring of the U.S. federal civil service (OECD 1999).
19. In part, this reflects the privatization of some activities of the federal government. See subsection 5.4 for details on the privatization issue.

Chart 6: Employment, Federal Public Sector (CE), 1981=100



Although the military was not included in the definition of public sector, employment in that sector fell by a significantly greater percentage in the United States than in Canada. The restructuring of military employment in the United States started much earlier than most other major restructuring activities in the two countries. From 1986 to 1997, military employment fell by a third in the United States and the ratio of military employment to the total working-age population declined from 1.2 per cent to 0.7 per cent over this same period. In Canada, restructuring of military employment began in 1992 and by 1997 it had fallen by 16.9 per cent (Chart 7). Over this period, the ratio of military employment to the total workforce in Canada fell from 0.5 per cent to 0.4 per cent.

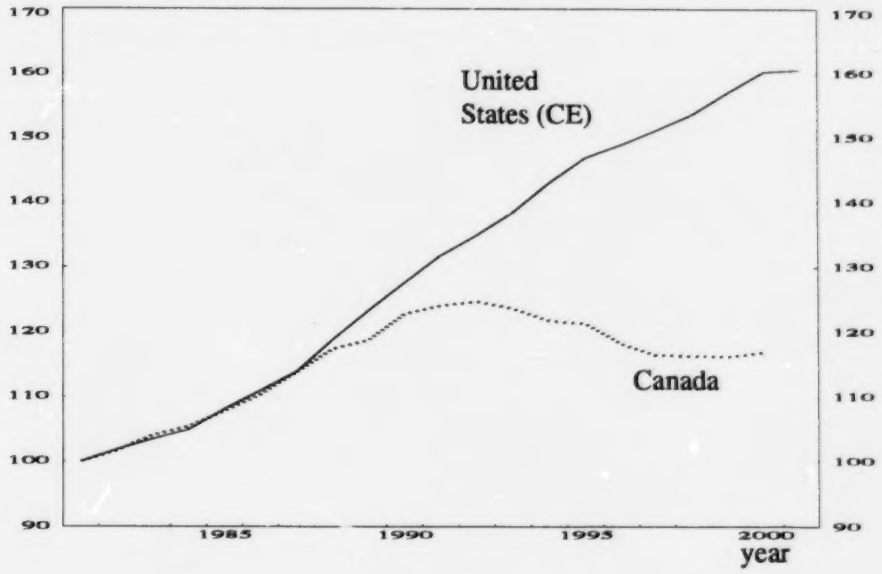
Chart 7: Employment, Military Personnel, 1981=100



The biggest difference between the two countries clearly occurred at the provincial/state (CE) level, where employment represents over half of total public sector employment in both countries.[20] As the trend in employment in Canada's provincial public sector experienced a downturn after 1992, the U.S. state public sector (CE) continued on its original path. From 1992 to 1998, provincial public sector employment in Canada fell by 6.7 per cent, while it grew by 14 per cent in the United States over the same period. For the remainder of the decade, provincial public sector employment levelled off in Canada while it continued to increase in the United States (Chart 8).

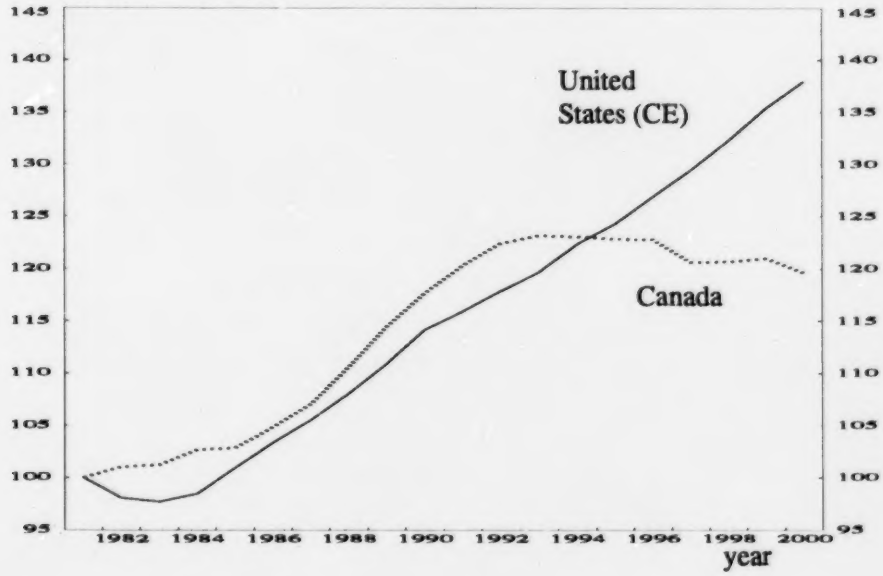
20. Provincial public sector employees represented 51 per cent of the total in 1998, while U.S. state public sector (CE) employees represented 55 per cent of the total in 1998.

Chart 8: Employment, Provincial/State Public Sector (CE), 1981=100



Significant differences between Canada and the United States are also evident at the local level. Employment in the local public sector in Canada drifted down from 1992 to 2000. U.S. local public sector (CE) employment continued to grow after 1991, posting a gain of 17.1 per cent during the 1990s (Chart 9).

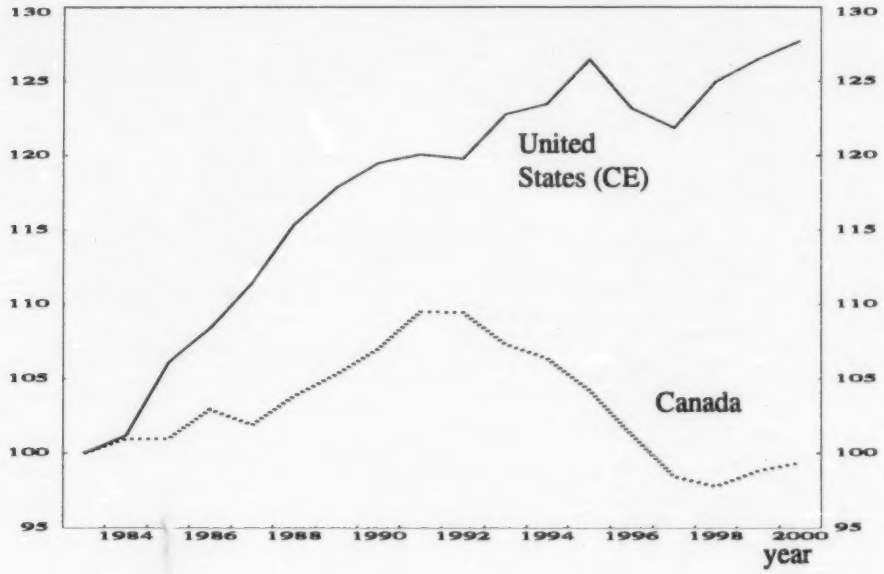
Chart 9: Employment, Local Public Sector (CE), 1981=100



5.3 Employment—by function

If we look at the data by sector, employment in public administration, education, and health care and social services underwent greater structural change in Canada than in the United States in the 1990s. Employment in public administration peaked in 1991 in Canada and by 1998 it had fallen by 10.7 per cent. At the end of 2000, it was still below its level in 1983 (Chart 10). In the United States, employment in public administration contracted somewhat from 1995 to 1997, but the losses from this contraction were reversed during the final years of the decade. By 2000, employment in U.S. public administration was 27.7 per cent higher than in 1983.

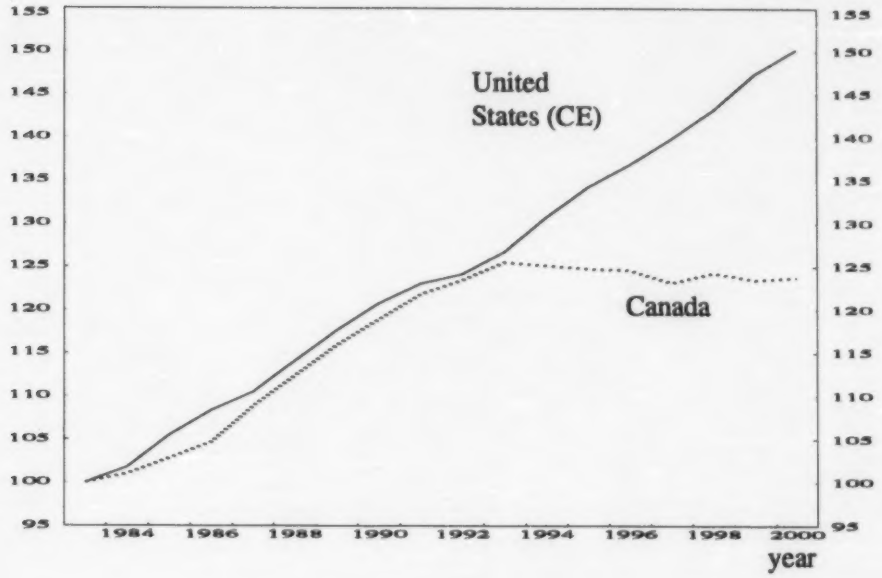
Chart 10: Employment, Public Administration, 1983=100



Employment in the education sector has increased virtually without interruption since 1983 in the United States, whereas in Canada employment in education levelled off from 1993 to 2000 (Chart 11).[21] In 2000, employment in the education sector in Canada was 23.7 per cent higher than in 1983, but it was 50.2 per cent higher in the United States.

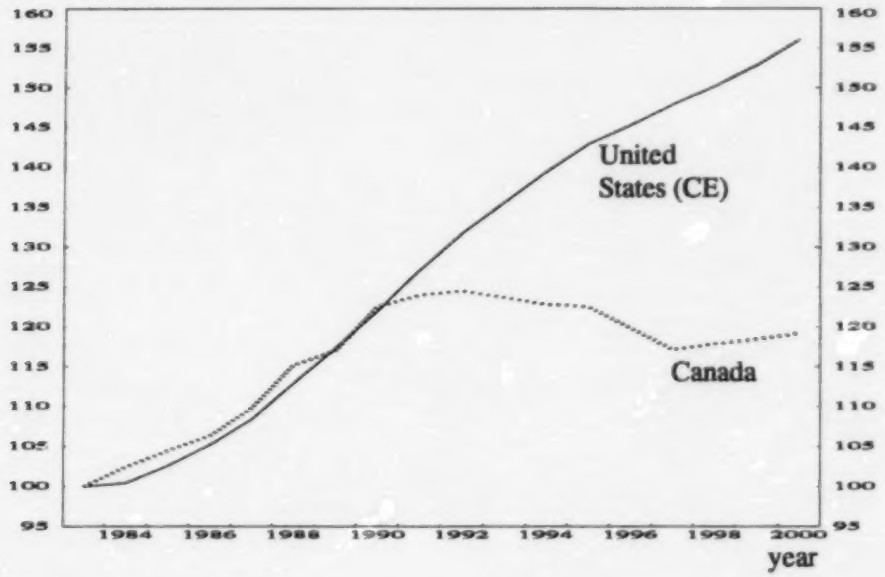
21. To obtain a "Canadian-equivalent" measure for comparability, the U.S. data include all private and public education.

Chart 11: Employment, Educational Services, 1983=100



The story is similar for health care and social services (Chart 12). After peaking in 1992, employment in this sector fell in Canada, while there was almost no change in the upward trend in the United States. Between 1992 and 1998, employment in health care and social services fell by 5.3 per cent in Canada and rose by 14.0 per cent in the United States.

Chart 12: Employment, Health Care and Social Services, 1983=100



While these numbers indicate that restructuring in the public sector in Canada has clearly led to a decrease in the number of public employees, they provide little information about the diversity and complexity of the reforms undertaken during this period.[22] Reforms, such as contracting out, mergers, and rationalization, were often proposed as means of introducing greater cost-effectiveness into the system. For the most part, contracting out appears to have been restricted to non-core activities, such as cleaning, laundry, and food services, to gain savings through competition. Mergers and rationalization were also commonly introduced, to eliminate duplicate administrative functions and to use existing resources more efficiently. While much debate remains about the success or failure of these policies, they have had a distinct impact on the level of public employment, which likely also had an effect on aggregate employment. Sections 5.4 and 5.5 discuss the extent to which these reforms involved the transfer of employees from the public to the private sector and the net impact on aggregate employment.

5.4 Privatizations, contracting out, and consulting services

Although many jobs were lost outright during the restructuring period, a few positions were simply transferred to the private sector either through privatizations or the increased use of contracting and consulting services. Thus, the employment trends shown in Chart 4 represent the upper bound of the direct effects on employment from restructuring in the public sector. Very little

22. A good starting point for a more detailed analysis of these reforms would be the various studies of the Government and Competitiveness Project, School of Policy Studies, Queen's University (1993–94).

concrete data on the employment effects from privatization and consulting were available. Therefore, this section must be read with some caution.

Some indication of the extent of privatization is possible for members of the federal public service who are employed by the Treasury Board (representing only about 65 per cent of the total federal public service).[23] Unfortunately, the published data report only the combined sum of the number of privatizations and devolutions in the database, so it is not possible to identify only the number of privatizations. Whereas devolution generally refers to the transfer of authority from one jurisdiction to another, the Treasury Board's use of the term includes any situation where authority is transferred outside of their universe. Instances of federal to federal devolution could be included in these privatization figures as authority is transferred from one federal department that is covered by Treasury Board to one that is not.

Between 1 April 1995 and 31 March 1998, the portion of the federal public service that was employed by the Treasury Board was reduced by 39,088 indeterminate[24] employees. Of these reductions, 9,784 were the result of employees being transferred to other jurisdictions through a devolution or privatization. This includes the extraordinary transfer of 6,000 jobs from Transport Canada to NavCanada. In other words, apart from the NavCanada privatization, only about 10 per cent of the reductions were not outright job losses.

It was even more difficult to gauge the importance of privatizations at the provincial and municipal levels. No hard data were available and the following conclusions are based entirely on anecdotal evidence collected by the Bank of Canada's regional offices.

Overall, it would appear that privatization was not significant at the provincial and municipal level in the areas of public administration, education, and health care and social services. There are a few examples where privatizations did occur, but these did not translate into significant effects on employment. For example, some Quebec hospitals privatized their cafeteria services, but this represented only a very small proportion of the total staff. In British Columbia, nine government services, such as traffic data-collection and alcohol and drug treatment, were listed for

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23. The Treasury Board employs federal public service employees in departments and agencies listed under Schedule I, Part I of the Public Service Staff Relations Act (PSSRA I-I). Employees covered by Schedule I, Part II of the PSSRA—who work in the other parts of the federal government such as the Bank of Canada and the House of Commons, students, Governor-in-Council appointees, ministerial staff, enumerators, interviewers, federal judges and deputy ministers, members of the Canadian Forces, and the RCMP—are excluded from these figures.
24. Indeterminate employment indicates the status of people appointed to the public service for an unspecified time. They are commonly referred to as "permanent" public service employees (Canada. Treasury Board Secretariat of Canada 1998).

privatization. However, the 1993 Korban Commission brought most of these services back into the public sector.

Contractors and consultants hired by the government do not show up in the public sector employment statistics but, nevertheless, are important for assessing the net effects on employment. Very little data were available on the size of this group. In fact, both Treasury Board and Public Works and Government Services have stated that "they have no handle on the size of this floating workforce of contractors" (May 2000). This dearth of information makes it impossible to determine the exact amount by which public sector employment would be modified if contractors and consultants were accounted for. General conclusions about the significance of this group can be formed from expenditure statistics in the public accounts. Federal expenditures on contracting and consulting services grew by $270 million from 1994 to 1997 (Auditor General of Canada 1998). However, spending in this area represents a relatively small percentage of total expenditure on personnel, and therefore an adjustment to incorporate increased use of consultants would not significantly modify the 18.6 per cent decline in employment at the federal level in Canada from 1992 to 1998 (Chart 6).

There is other evidence that some former civil servants provided consulting services to the government following separation. A Statistics Canada survey (Canada. Statistics Canada 1994) supports this conclusion. It covered 3,100 former indeterminate federal public sector employees in the National Capital Region, who were separated from the government under the Workforce Adjustment Program in 1991 and 1992, and found that 16 per cent of the displaced workers gained employment[25] in service industries, including management, business, scientific, and other specialized consulting. Similarly, of the 12 per cent who became self-employed, most offered consulting services and over half of their contracts were with the public sector.[26] However, since this survey tracked former federal employees only in the Ottawa-Hull region, the proportion of displaced workers who moved into public sector consulting may be lower in areas without such a significant government presence. The study found that, among the self-employed, almost half of their (first) businesses had durations of less than two years and only 58 per cent were still in business at the July 1994 interview, suggesting that a proportion of these people may have experienced a period of unemployment.

25. Includes both paid workers and the self-employed.
26. The self-employed were asked, in a multiple-response question, to identify who they had contracted their services to: 14 per cent reported that they had received work from Crown corporations, 80 per cent had public sector contracts, and 72 per cent did work for the private sector (Canada. Statistics Canada 1994).

The Canadian and U.S. public sector (CE) employment figures should be interpreted as a close estimate of the actual employment changes over the last two decades. It does not appear that the trends shown in Chart 4 would be modified significantly if adjustments were made for privatizations and consultants.

5.5 Effect of restructuring on the Canadian labour market

Intuitively, the large number of positions eliminated from the public sector in Canada during the 1990s suggests that the restructuring had a substantial negative impact on the Canadian labour market over this period. However, since many of those who were laid off were able to eventually regain employment, a more complete way of measuring the net impact on employment would be to take into account the ability of the displaced public sector workers to find jobs. But, even this can only be interpreted as an approximation of the net effect, because it ignores many of the dynamic, general-equilibrium aspects of the restructuring by not taking into account the experiences of other participants and would-be participants in the labour market. For example, as the former public sector employees gained employment elsewhere, they might have been filling jobs that would have been taken by someone else. However, the scope of this paper and the limitations of the available data lead the focus of our analysis to abstract from these broader repercussions, and the reader is cautioned to interpret the conclusions as such. To be absolutely clear, the goal is to evaluate the impact of the restructuring on aggregate employment after taking into account the subsequent labour-market experiences of displaced public sector workers. Section 5.5.1 summarizes the information available from surveys and section 5.5.2 uses this information to estimate the net effect on employment.

5.5.1 Survey evidence

Two longitudinal surveys that tracked former federal public sector employees are used to obtain a general impression of the post-departure labour-market experiences of the displaced workers. The surveys are the Statistics Canada survey mentioned in section 5.4 and a study sponsored by the Union of National Defence Employees and certain other stakeholders[27] entitled Civilian Labour Adjustment in National Defence (CLAND). The surveys document the experiences of workers at various time intervals following displacement and report that, even after a considerable amount of time had passed, a significant proportion of the sample was still unemployed, while many others had exited the labour market altogether.

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27. The Department of National Defence, Treasury Board Secretariat, Human Resources Development Canada, and the Public Service Alliance of Canada.

The Statistics Canada study focused on displaced workers in the National Capital Region from 1991 to 1994. It investigated the experiences of both indeterminate full-time employees who left the federal public service under the Workforce Adjustment Program as well as persons whose term jobs of six months or greater ended in 1991 or 1992. Among those former indeterminate employees who remained participants in the labour force, almost 40 per cent had no jobs one year after separation, with 85 per cent of these respondents (to a multiple response question) citing "shortage of jobs" as a reason for difficulty during their job search. Former term employees seemed to find employment only marginally faster than their indeterminate counterparts in that "more than a third [had] to search for 6 months or longer after separation to find another job." At 88 per cent, a significant number of them also reported "shortage of jobs" as a difficulty during their job search. The unemployment rate among the indeterminate group was still 21 per cent in July 1994, which on average was 30 months after separation, compared with an overall unemployment rate of 8 per cent in the Ottawa-Hull region.[28] Former term employees fared slightly better, with an unemployment rate of 16 per cent two and a half years after separation, but this was still twice the overall unemployment rate in the Ottawa-Hull region.

The CLAND project began in July 1995 and consists of three reports; the final one, "Wave Three," was completed in December 1999. In total, federal budgets called for 13,500 Department of National Defence (DND) civilian positions to be eliminated in the mid-1990s. This report contained the results from interviews with DND and former DND employees twenty-one months after they were offered a special departure-incentive package between September 1994 and August 1996. It found that only 12 per cent of respondents who left DND under the departure program had secured full-time employment (including contract employment), while another 9 per cent became self-employed and 7 per cent secured part-time work. It found that 25 per cent of respondents were unemployed and looking for work at the time of the survey.[29]

On balance, these studies suggest that a sizable proportion of government workers who lost their jobs in the early and mid-1990s experienced difficulty finding work, an outcome that likely increased the unemployment rate in Canada over the period from 1992 to at least 1997. In order to complete the picture of who is not working and hence evaluate the impact on aggregate employment, one must account for those individuals who exited the labour force as well.

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28. Canada. Statistics Canada (1994).
29. Although some who reported being unemployed when surveyed after 21 months had some post-departure work experience, over half had been without any work since being released.

Of those who were separated from the public service, the Statistics Canada survey found that 56 per cent of the former indeterminate employees were not in the labour force as of July 1994, with the majority reporting retirement as the reason. This is not surprising, considering that close to 60 per cent of those affected by the Workforce Adjustment Program were 55 years or older. The CLAND study reveals a similar trend: 47 per cent of respondents who left DND were not in the labour force at the time of the survey, with 40 per cent of respondents identifying retirement as their current labour-market state. Again, this result was consistent with the age profile of the sample: "roughly half were 50 years or older."[30] Among retirees from the CLAND study, approximately 80 per cent indicated that the departure program encouraged them to retire earlier than they had planned. The former term employees tracked by the Statistics Canada survey were much younger; two-thirds of the sample from this group were between 25 and 44 years old and, as might be expected, 90 per cent of them remained active in the labour force.

Overall, the surveys found that there was high unemployment among the samples and also a substantial number who exited the labour force, with the sum of these groups representing the total number not working. If it is assumed that those from the survey are reasonably representative of the greater population of workers displaced during the restructuring, then it is possible to obtain a rough approximation of the short-term net impact on aggregate employment of the decline in the public sector workforce in Canada during the 1990s. Considering that the most significant declines in public sector employment occurred between 1992 and 1997, section 5.5.2 focuses on that period.

5.5.2 Estimating the net effect on employment

The estimate is the product of two numbers: (i) the gross effect of restructuring on aggregate employment, and (ii) the proportion of displaced public sector workers who were able to regain employment by 1997. The employment losses can be considered as a series of discrete, negative shocks to aggregate employment that decay over time as some displaced workers secure other jobs. The magnitude of each of these shocks is simply the annual decline in public sector employment. Determining the cumulative contribution of each shock is more complicated, in that it requires that the survey evidence be used to estimate the proportion of displaced workers who are still not working by 1997. These numbers will be used to approximate the net effect of the restructuring on aggregate employment.

Multiplying the per cent change in public sector employment by the ratio of public sector workers to total workers gives the gross effect of the restructuring on aggregate employment. Section 5.1

30. Civilian Labour Adjustment in National Defence Research Project (1998).

documents that, from 1992 to 1997, public sector employment in Canada fell by about 6 per cent. Using this figure and the average ratio of public sector workers to total workers from 1992 to 1997 (19 per cent), the gross effect of the restructuring on aggregate employment is calculated to be about 1.15 per cent. Since some of those affected by the restructuring would have gained jobs elsewhere, the next step is to factor them into the calculation of the net impact.

Both the Statistics Canada survey and the CLAND study report point-in-time assessments of the employment outcomes of selected former public service workers. However, the Statistics Canada survey covers a broader cross-section of individuals in terms of both age and type, so its results are seemingly more appropriate for the following calculation.[31] Certain characteristics of this survey deserve comment. The survey covers individuals released between 1991 and 1992, at the trough of a cycle, who therefore faced macro conditions that were less favourable than those encountered by individuals who were released later in the 1990s. Thus, the labour-market outcomes observed among the survey sample may cause the estimate to overstate the number of displaced workers who were not working in 1997. This upward bias may be slightly offset by the fact that the employment status of the individuals from the survey were reported for an average of 30 months after separation, which is somewhat longer than the average duration of displacement for the greater population of displaced workers.[32] If the probability of re-employment increases with the amount of search time (i.e., length of time since displacement), these data would overstate (ceteris paribus) the number of positive employment outcomes for displaced workers, and therefore mitigate some of the bias owing to the weak macro conditions in the sampling period.

The Statistics Canada survey covered both former indeterminate employees and term employees whose contracts were not renewed. The indeterminate employees tended to be older, while the term employees were generally younger. As a way of summarizing the information from this survey, a weighted average of the labour-market outcomes of both groups was obtained and used in the following calculations. The relevant information is outlined in Table 3. For comparison, the survey results from the CLAND study are also provided.

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31. The observations reported in the CLAND survey can be carried through the calculation in an identical fashion, but result in a seemingly less prudent final estimate, and so should be interpreted cautiously.
32. Assuming a constant rate of decline of public sector employment over the period of restructuring, it can be worked out that by 1997 the average duration of displacement for all individuals released was roughly 22 months.

Table 3: Longitudinal Survey Results

	Statistics Canada Tracking Study of Federal Employees *Displaced: 1991 and 1992* **(interviewed average of 30 months out)**			**Civilian Labour Adjustment in National Defence** *Displaced: Sept. 94-Aug. 96* **(interviewed 21 months out)**
	Indeterminate full-time employees	**Term workers whose contracts expired**	**Weighted average**	**Civilian reduction program**
Persons represented by survey	2,960	2,530	–	13,500
Employed	35%	76%	54%	28%
Unemployed	9%	14%	11%	25%
Out of labour force	56%	10%	35%	47%
No longer employed	64%	24%	45%	72%

From Table 3, it can be seen that 64 per cent of former indeterminate employees and 24 per cent of term workers whose contracts expired were no longer employed at the time they were interviewed. Weighting this outcome by the number of persons represented in each category implies that 45 per cent of individuals from this survey were not working an average of 30 months after separation. As noted previously, this number is used to proxy the typical employment experience of all displaced workers over the 1992–97 period. Therefore, multiplying this number by the gross effect on aggregate employment obtained earlier (1.15 per cent) suggests that the net impact of the restructuring from 1992 to 1997, given the subsequent labour market experiences of displaced workers, was about 0.5 percentage points.

6. Conclusion

In the early 1990s, a recession led to a sharp contraction in labour markets in Canada and the United States. The 1990s were also a period of major restructuring in the public sector in Canada. Indeed, employment data suggest that the public sector underwent a much more profound structural change in Canada than in the United States following the recession. This may have contributed to the slower cyclical recovery in Canada. For most levels of government and most major functions of government, employment during the 1990s either fell more significantly in Canada than in the United States or fell in Canada while rising in the United States. The ratio of

public sector employment to working-age population fell by 1.9 percentage points in Canada from 1992 to 2000, while it rose 1.1 percentage points in the United States. Although many workers displaced from the public sector in Canada re-entered the work force in other sectors, the available surveys indicate that others were slow to gain employment or left the labour force altogether. Thus, it appears that public sector consolidation was one factor contributing to the slower recovery in employment in Canada in the 1990s.

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Appendix A

A.1 OECD and IMF Estimates of General Government Structural Balances

(surplus + or deficit - as a percentage of trend GDP)

Year	OECD[a]	IMF[b]	Finance[c]
1978	-4.1	-4.0	-5.9
1979	-3.0	-3.1	-4.6
1980	-2.9	-3.0	-4.8
1981	-1.6	-1.8	-3.3
1982	-2.9	-2.0	-3.3
1983	-4.6	-2.9	-7.0
1984	-5.5	-4.4	-7.9
1985	-7.5	-5.5	-9.9
1986	-6.1	-4.6	-8.6
1987	-5.0	-3.7	-7.3
1988	-4.7	-3.7	-6.9
1989	-4.8	-4.4	-6.9
1990	-5.0	-4.4	-7.2
1991	-5.4	-4.1	-8.2
1992	-5.6	-4.9	-8.5
1993	-5.4	-4.4	-8.2
1994	-4.7	-3.9	-7.0
1995	-3.6	-2.9	-5.4
1996	-0.9	0	-2.0
1997	1.2	2.1	0.8
1998	1.4	1.7	0.8
1999	2.9	2.6	2.6

a. Organisation for Economic Co-operation and Development, *OECD Economic Outlook, June 1994* and *June 2000*

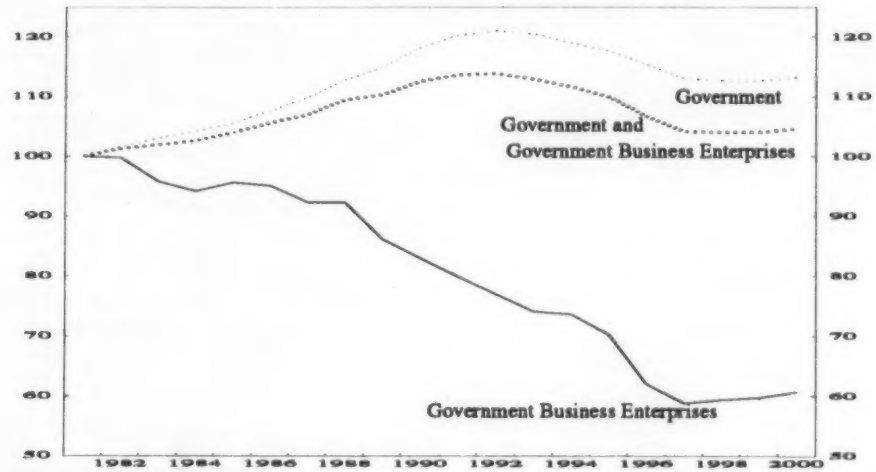
b. International Monetary Fund, *World Economic Outlook, May 1998* and *October 2000*

c. Canada, Department of Finance, *Fiscal Reference Tables, September 2000*

Appendix B

B.1 Employment in Government Business Enterprises

(1981=100)



The public sector was defined in the main text of this paper to exclude Government Business Enterprises (GBEs). This appendix provides a brief description of GBEs. GBEs are firms that are controlled by the government and operate in commercial markets in a way that is similar to private firms. GBEs can be found at all levels of government and although a majority of GBEs are, in fact, Crown corporations, this is neither a sufficient nor a necessary condition. For a more precise definition of GBEs, please see Statistics Canada's Public Institutions Division's "Guide to the Public Sector in Canada" (1998b).

Some examples[1] of GBEs at the federal level include: the Export Development Corporation, Canadian Wheat Board, and Royal Canadian Mint. Newfoundland and Labrador Hydro and the British Columbia Hydro and Power Authority are examples of GBEs at the provincial level. The Oakville Hydro Electric Commission and the City of Regina Transportation System are examples at the municipal level.

By 2000, employment in GBEs had declined nearly 40 per cent from its 1981 level.

Specific information was not found on the employment effects of privatization for GBEs. However, it is probable that privatization was more significant at the GBE level than at the government level, owing to the existing commercial structure of GBEs.

1. The complete listing of GBEs used by Statistics Canada is available from the Public Institutions Division.

Appendix C

C.1 Data Sources

The Canadian data used in this paper come from establishment surveys gathered through the Public Institutions Division (PID)[1] at Statistics Canada, and the U.S. data are from the Current Population Survey (CPS), which is a household survey collected by the Bureau of Labor Statistics. Of course, some inconsistencies arise from the disparate methodologies used in the two data sources, and it would have been preferable to use establishment data in both cases. However, the National Current Employment Statistics, a U.S. establishment survey, covers only business establishments and, as a result, does not provide any information about public sector employment. Military personnel are captured in the PID numbers for Canada. In the United States, the CPS samples the civilian, non-institutional population, and therefore excludes military personnel. U.S. military data come from the Statistical Abstract of the United States. Tables C1 to C12 provide the CANSIM and Bureau of Economic Analysis identifiers for each of the series used in the main text of this paper. The numerals in the table numbers correspond to the chart numbers presented in the paper.

1. See Statistics Canada's Public Institutions Division's "Guide to the Public Sector of Canada" (1998b).

Table C1: Employment Ratio for Canada and the United States

Canada - Employment Ratio	
Employment Ratio	d980799

United States - Employment Ratio	
Total Employment	ehhc
Population of Working-Age (16+)	nc16#

Table C2: Government Expenditure on Goods and Services as a Proportion of Real GDP

Canada - Government Expenditure on Goods and Services as a Proportion of Real GDP	
Real Gross Domestic Product	D14872
Net Government Current Expenditure on Goods and Services	D14848
Government Gross Fixed Capital Formation	D14849

United States - Government Expenditure on Goods and Services as a Proportion of Real GDP	
GDP at 1992 prices	gdp92c
Government spending at 1992 prices	g92c

Table C3: Federal Government Balance as a Proportion of Nominal GDP

Canada - Federal Government Balance as a Proportion of Nominal GDP	
GDP at Market Prices	D14840
Net Lending	D15129

United States - Federal Government Balance as a Proportion of Nominal GDP	
Nominal GDP	gdp
Surplus (Deficit)	q.defgf

Table C4: Employment, Total Public Sector (CE)

Canada - Total Public Sector Employment	
Total Government Employment	D466462
(minus) Total DND Military Personnel	D459848

United States - Total Public Sector (CE) Employment	
Federal Government Employment, except Postal Service	EGF@PSNS
State Government Employment	EGSNS
Local Government Employment	EGLNS
Nursing and Personal Care Facilities Employment	E805NS
(Private) Hospitals Employment	E806NS
Home Health Care Services	E808NS
(Private) Educational Services Employment	E82NS
(Private) Social Services Employment	E83NS

Table C5: Ratio of Public Sector (CE) Employment to Working-Age Population

Canada - Ratio of Public Sector Employment to Working-Age Population	
Total Government Employment	D466462
(minus) Total DND Military Personnel	D459848
Population Age 15+ unadj. CDA	D984550

United States - Ratio of Public Sector (CE) Employment to Working-Age Population	
Federal Government Employment, except Postal Service	EGF@PSNS
State Government Employment	EGSNS
Local Government Employment	EGLNS
Nursing and Personal Care Facilities Employment	E805NS
(Private) Hospitals Employment	E806NS
Home Health Care Services	E808NS
(Private) Educational Services Employment	E82NS
(Private) Social Services Employment	E83NS
Population age 16+	NC16#

Table C6: Employment, Federal Public Sector (CE)

Canada - Employment - Federal Public Sector	
General Government Employment	D466028
(minus) Total DND Military Personnel	D459848

United States - Employment - Federal Public Sector (CE)	
Federal, except Postal Service	EGF@PSNS
(minus) Employed Federal Government Hospital	EGFHNS

Table C7: Employment, Military

Canada - Employment - Military	
Total DND Military Personnel	D459848

United States - Employment - Military	
Active Duty Military Personnel	usmilitary[a]

a. U.S. Department of Defence, Statistical Abstract of the United States

Table C8: Employment, Provincial/State Public Sector (CE)

Canada - Provincial/State Public Sector Employment	
General Government Employment	D466358
Health Care and Social Services	D466371
Universities, Colleges, and Trade Institutions	D466384

United States - Provincial/State Public Sector (CE) Employment	
State Government Employment	EGSNS
(Private) Hospitals Employment	E806NS
Federal Government Hospital Employment	EGFHNS
Local Government Hospital Employment	EGLHNS
Nursing and Personal Care Facilities Employment	E805NS
Home Health Care Services	E808NS
(Private) Educational Services Employment	E82NS
(Private) Social Services Employment	E83NS

Table C9: Employment, Local Public Sector (CE)

Canada - Employment - Local Public Sector	
General Government Employment	D466240
School Boards	D466266

United States - Employment - Local Public Sector (CE)	
Local Government Employment	EGLNS
(minus) Local Government Hospitals Employment	EGLHNS

Table C10: Employment, Public Administration

Canada - Employment - Public Administration	
Public Administration	L57088

United States - Employment - Public Administration	
Public Administration	LFU1150030000

Table C11: Employment, Educational Services

Canada - Employment - Educational Services	
Educational Services Employment	L57103

United States - Employment - Educational Services	
(Private) Educational Services Employment	E82NS
State Education	EGSEDNS
Local Education	EGLENS

Table C12: Employment, Health Care and Social Services

Canada - Employment - Health Care and Social Services	
Health Care and Social Services	D466371

United States - Employment - Health Care and Social Services	
Nursing and Personal Care Facilities Employment	E805NS
(Private) Hospitals Employment	E806NS
Home Health Care Services	E808NS
Federal Government Hospital Employment	EGFHNS
State Government Hospital Employment	EGSHNS
Local Government Hospital Employment	EGLHNS
(Private) Social Services Employment	E83NS

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